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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,439	08/27/2003	Uma Arun	GP-303940 (2760/126)	5178

7590 01/22/2009
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EXAMINER

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ART UNIT	PAPER NUMBER
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2626

MAIL DATE	DELIVERY MODE
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01/22/2009

PAPER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/649,439
Filing Date: August 27, 2003
Appellant(s): ARUN, UMA

James D. Stevens
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/25/08 appealing from the Office action mailed 4/25/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,012,030	French-St.George et al.	1-2000
6,882,973	Pickering	4-2005

US20030158732 A1

Pi et al.

08-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 8-12, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over French-St. George et al. (US Patent 6,012,030) in view of Pickering (US Patent 6,882,973).

As per claims 1, 8 and 15, French-St. George et al. teach a method, computer readable medium, and system for speech recognition that adjusts to premature enunciator commands, comprising:

activating the speech recognition system (Col. 9, lines 12-14, when speech recognition is enabled, the input mode is checked to determine whether the speech recognition is on);

receiving speech input from a user before the system is ready to receive speech input (as shown in Fig. 10 and described in Col. 10, lines 57-60, Fig. 10

sets out an example of an error recovery route for a time out failure because input was received to late or too early.); and

determining that the user has spoken prematurely (Fig. 10 shows the feature of "SPOKE TOO SOON" when the user's input is received before the listening period, also the fact that the user "spoke too soon" after the query "spoke too late" determines the user as a premature enunciator).

However, French-St. George et al. does not specifically mention adjusting the system after determining that the user has spoken prematurely to allow for earlier detection of user speech input. Conversely, Pickering teaches adjusting the system after determining that the user has spoken prematurely to allow for earlier detection of user speech input (steps 420, 430, 440, and 465 of Fig. 2, also Col. 7, lines 17-35. Step 440 determines that the user spoke prematurely and in step 465 the user input is detected (recognized), this detection being earlier than if received after the prompt was completed).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of adjusting the system after determining that the user has spoken prematurely to allow for earlier detection of user speech input as taught by Pickering for French-St. George's method because Pickering provides a voice processing system that uses speech recognition and allows barge-in. Pickering waits for the recognition result to be returned before interrupting the outgoing prompt in order to prevent triggering the

termination of the prompt in circumstances where this was not actually the intention of the caller (Col. 1, lines 6-8, and Col. 2, lines 36-45 and lines 51-54).

As per claims 2, 9, and 16, French-St. George et al. in view of Pickering, teach the method, computer readable medium and system for speech recognition according to claims 1,8, and 15, wherein the speech recognition system is activated selectively by the user (French-St. George's Col. 6, lines 1-12, mobile telephone unit comprises body, display screen, touch sensitive buttons, conventional keypad, and a speaker associated with the speech interface to providing speech prompts for the various modes of interaction which may be selected by a user. Also in Col. 6, lines 24-26, for example the user may pick up the mobile phone, thus activating the unit, and turning on all default input/output modalities).

As per claims 3, 10, and 17, French-St. George et al. in view of Pickering teach the method, computer readable medium and system for speech recognition according to claims 1,8, and 15, wherein the activation of the speech recognition system is followed by informing the user that the system is ready to receive input and a listening period wherein the speech recognition system is able to receive speech input (French-St. George's Col. 1, lines 25-30, speech interface prompts the user when to speak by providing a speech prompt. After the prompt, a speech recognizer is turned on for a limited time window, during which time the user may respond).

As per claim 4, French-St. George et al. in view of Pickering teach the method for speech recognition according to claim 1, further comprising the speech recognition system providing a prompt indicating that the system is ready to receive speech input, receiving the user speech input before the system has started a first listening period that begins after a delay following the prompt, and thereafter providing a subsequent prompt and starting a subsequent listening period at an earlier time relative to its prompt. (French-St. George's Col. 7, lines 56-58, Fig. 10 shows the feature of "SPOKE TOO SOON" when user's input is received before the listening period, which begins "AFTER the prompt;" this would be the first listening period. For the second listening period, French-St. George et al.,'s Fig. 10 shows repeating the prompts when no speech was recognized, such as indicating the user to "repeat the request AFTER the Prompt" when the system determined the user to have spoken to soon.

However, French-St. George's does not specifically mention starting a subsequent listening period at an earlier time relative to its prompt. Conversely, Pickering teaches starting a subsequent listening period at an earlier time relative to its prompt (steps 400, 420, 430, 440, and 465 of Fig. 2, also Col. 7, lines 17-35. Step 440 determines that the user spoke prematurely and in step 465 the user input is detected (recognized), this detection being earlier than if received after the prompt was completed).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of starting a subsequent

listening period at an earlier time relative to its prompt as taught by Pickering for French-St. George's method because Pickering provides a voice processing system that uses speech recognition and allows barge-in. Pickering waits for the recognition result to be returned before interrupting the outgoing prompt in order to prevent triggering the termination of the prompt in circumstances where this was not actually the intention of the caller (Col. 1, lines 6-8, and Col. 2, lines 36- 45 and lines 51-54).

As per claims 11 and 18, French-St. George et al. in view of Pickering teach the computer readable medium and system for speech recognition according to claims 8 and 15, further comprising the speech recognition system to start a listening period at an earlier predetermined time interval (Pickering teaches starting a subsequent listening period at an earlier time relative to its prompt (steps 400, 420, 430, 440, and 465 of Fig. 2, also Col. 7, lines 17-35. Step 440 determines that the user spoke prematurely and in step 465 the user input is detected (recognized), this detection being earlier than if received after the prompt was completed).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of starting a listening period at an earlier predetermined time interval as taught by Pickering, in the method of French-St.George, because Pickering provides a voice processing system that uses speech recognition and allows barge-in. (Pickering waits for the recognition result to be returned before interrupting the outgoing prompt in order to prevent triggering the

termination of the prompt in circumstances where this was not actually the intention of the caller (Col. 1, lines 6-8, and Col. 2, lines 36-45 and lines 51-54)).

As per claims 5, 12, and 19, French-St. George et al. in view of Pickering teach a method, computer readable medium and system for speech recognition according to claims 4, 11, and 18, wherein the earlier listening period begins 50 to 100 ms before the speech recognition system informs the user of its readiness to receive input (It would have been obvious to one having ordinary skill in the art at the time the invention was made to make a decision choice for an appropriate time frame for the earlier listening period).

5. Claims 6, 7, 13, 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over French-St. George et al. (US Patent 6,012,030) in view of Pickering (US Patent 6,882,973) as applied to claims 1,8, and 15 above, and further in view of Pi et al. (US 2003/0158732).

As per claims 6, 13, and 20, French-St. George et al. in view of Pickering teach a method, computer readable medium and system for speech recognition according to claims 1, 8, and 15, but do not disclose the speech recognition system filtering sound overlays from user commands.

However, Pi et al. teaches the speech recognition system filtering sound overlays from user command (subtract prompt echo spectrum 520 from Fig. 5 and paragraph [0042]). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of the speech

recognition system filtering sound overlays from user command as taught by Pi et al. in the method, computer readable medium and system of French-St. George et al. in view of Pickering, because using traditional adaptive filtering methods to remove near-end prompt echo may significantly degrade the performance of automatic speech recognition engines used in interactive voice response (IVR) systems (paragraph [0006], more specifically lines 11-14).

As per claims 7 and 14, French-St. George et al. in view of Pickering and in further view of Pi et al. teach the method and computer readable medium according to claims 6 and 8. French-St. George et al., in view of Pickering do not specifically teach does not, but Pi et al. do teach processing filtered speech input through the speech recognition system (Pi et al.'s subtract prompt echo spectrum 520 (filtering speech input) from Fig. 5 and paragraph [0042], more specifically lines 5-7).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of processing filtered speech input through the speech recognition system as taught by Pi et al. for French-St. George et al.'s method, computer readable medium and system, as modified by Pickering, because using traditional adaptive filtering methods to remove near-end prompt echo may significantly degrade the performance of automatic speech recognition engines used in interactive voice response (IVR) systems (paragraph [0006], more specifically lines 11-14).

6. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over French-St. George et al. (US Patent 6,012,030) in view of Pickering (US Patent 6,882,973), and further in view of Pi et al. (US 2003/0158732).

As per claim 21, French-St. George et al. teach a method of using a speech recognition system to adjust to commands of premature enunciators, the method comprising:

- (a) activating a speech recognition system (Col. 6, lines 24-31);
- (b) indicating to the user that the system is ready to receive speech input (Col. 7, lines 56-58);
- (c) listening for speech input after a predetermined time delay (Fig. 10's "SPOKE TOO LATE" and "SPOKE TOO SOON" modules indicate that there is a short time delay for inputting speech after the prompt.);
- (d) recognizing that the user has spoken before the system was ready to receive the speech input (Fig. 10's "SPOKE TOO SOON"); and thereafter
- (e) indicating to the user via a prompt that the system is again ready to receive speech input (Fig. 10's "SPOKE TOO SOON" prompts the user to "repeat the request after the prompt"); and
- (g) receiving the speech input (Fig. 7 demonstrates that after the system has determined that the speech input was not valid, if the system has not timed out, it returns to receiving the input).

However, French-St. George et al. does not specifically mention the method comprising:

- (f) starting a listening period before the prompt is complete;
- (h) filtering the received speech input to remove noise residue due to the prompt.

Conversely, Pickering teaches starting a listening period before the prompt is complete (Paragraph [0083], "activation signal may be asserted, with appropriate coding, whenever a change in the activation of speech recognition is desired"). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of starting a listening period before the prompt is completed as taught by Pickering in the method of French-St. George et al., because, Pickering's signal may be changed (adjusted) to start at an earlier time interval in order to provide for a better recognition. Further, French-St. George et al., in view of Pickering, do not specifically mention the method comprising: (h) filtering the received speech input to remove noise residue due to the prompt.

However, Pi et al., do teach filtering the received speech input to remove noise residue due to the prompt (Pi et al.'s subtract prompt echo spectrum 520 (filtering speech input) from Fig. 5 and paragraph [0042]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of filtering the received speech input to remove noise residue due to the prompt as taught by Pi et al. for French-St. George et al.'s method, computer readable medium and system, as modified by Pickering, because using traditional adaptive filtering methods to remove near-end

prompt echo may significantly degrade the performance of automatic speech recognition engines used in interactive voice response (IVR) systems (paragraph [0006], more specifically lines 11-14).

As per claim 22, French-St. George et al. in view of Pickering and Pi teach the method of claim 21, wherein the predetermined time delay comprises a temporal pause occurring between indicating that the system is ready to receive speech input and listening for user speech input (In French-St. George's Fig. 10, "SPOKE TOO LATE" and "SPOKE TOO SOON" modules indicate that there is a short time delay for inputting speech after the prompt, also Col. 2, lines 43-47).

As per claim 23, French-St. George et al. in view of Pickering and Pi teach the method of claim 21, wherein the starting step (f) begins 50- 100ms before the prompt is complete (It would have been obvious to one having ordinary skill in the art at the time the invention was made to make a decision choice for an appropriate time frame for the earlier listening period).

As per claim 24, French-St. George et al. in view of Pickering and Pi teach the method of claim 21, further comprising carrying out a plurality of iterations of steps (a) through (d) prior to steps (e) through (h) (French-St. George's Fig. 10 illustrate that the steps of prompting and re- prompting may occur up to 3 times).

As per claim 25, French-St. George et al. in view of Pickering and Pi teach the method of claim 21, further including determining whether a user has exceeded an error count associated with the plurality of iterations of steps (a)

through (d) (French-St. George's Fig. 10 illustrate that the steps of prompting and re-prompting may occur up to 3 times).

(10) Response to Argument

Applicant argues that the combination of French-St. George et al., in view of Pickering does not teach the claimed “adjusting the [speech recognition] system after determining that the user has spoken prematurely to allow for earlier detection of user speech input”, of claims 1-5, 8-12, and 15-19. Examiner disagrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of adjusting the system after determining that the user has spoken prematurely to allow for earlier detection of user speech input as taught by Pickering for French-St. George's method because Pickering provides a voice processing system that uses speech recognition and allows barge-in. Pickering waits for the recognition result to be returned before interrupting the outgoing prompt in order to prevent triggering the termination of the prompt in circumstances where this was not actually the intention of the caller (Col. 1, lines 6-8, and Col. 2, lines 36-45 and lines 51-54).

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections

are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Regarding claims 6,7, 13, 14, 20 and 21-25, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of filtering the received speech input to remove noise residue due to the prompt as taught by Pi et al. for French-St. George et al.'s method, computer readable medium and system, as modified by Pickering, because using traditional adaptive filtering methods to remove near-end prompt echo may significantly degrade the performance of automatic speech recognition engines used in interactive voice response (IVR) systems (paragraph [0006], more specifically lines 11-14).

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 2626

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Vijay B. Chawan/

Primary Examiner, Art Unit 2626

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